

ABSTRACT OF THE DISCLOSURE

Disclosed is a magnetoresistance device which uses a ferromagnetic tunnel junction formed by inserting an insulating layer between two ferromagnetic layers and whose application to a magnetic head and a magnetoresistance memory is promising. The magnetoresistance device has a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of the first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than the Fermi energy and the other spin has a metallic band at the same level.